

Chemical Analysis Report

NE-DIST-2019-03-07-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **LSJR Coast**
Request ID: **RQ-2019-03-04-15**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 01-APR-2019 16:32

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

NON-CONFORMANCE REPORT INCLUDED

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: DUNN CR AT FAYE ROAD

Collection Date/Time: 03/06/2019 10:05

Field ID: 20030140

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2067990	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P360090	
	EPA 300.0	Bromide	22		mg Br/L	P360483	
	SM 2320 B-97	Total Alkalinity	77		mg CaCO3/L	P360330	
	SM 2540 D-97	TSS	6	I	mg/L	P360217	
	SM 4500 F-C-97	Fluoride	0.43		mg F/L	P360336	
2067993	EPA 350.1 Rev. 2.0	Ammonia-N	0.030	Y	mg N/L	P360273	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49	Y	mg N/L	P360294	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P360321	
	EPA 365.1 Rev. 2.0	Total-P	0.086	Y	mg P/L	P360440	
	SM 5310 B-00	Organic Carbon	12	Y	mg C/L	P360636	
2067996	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.056		mg P/L	P360093	
2068075	EPA 200.7 Rev. 4.4	Iron	360	I	ug/L	P360388	
		Manganese	14		ug/L	P360388	
		Zinc	15	U	ug/L	P360388	
	EPA 200.8 Rev. 5.4	Aluminum	234		ug/L	P360388	
		Antimony	0.20	U	ug/L	P360388	
		Arsenic	1.91		ug/L	P360388	
		Cadmium	0.080	U	ug/L	P360388	
		Chromium	1.6	U	ug/L	P360388	
		Copper	1.6	U	ug/L	P360388	
		Lead	0.80	U	ug/L	P360388	
		Nickel	2.0	U	ug/L	P360388	
		Selenium	0.80	U	ug/L	P360388	
		Silver	0.040	U	ug/L	P360388	
		Thallium	0.40	U	ug/L	P360388	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 365.1 Rev. 2.0: Total-P: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 5310 B-00: Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: SISTERS CREEK AT HECKSCHER DR

Collection Date/Time: 03/06/2019 10:35

Field ID: 20030491

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2067991	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P360090	
	EPA 300.0	Bromide	54		mg Br/L	P360483	
	SM 2320 B-97	Total Alkalinity	99		mg CaCO ₃ /L	P360330	
	SM 2540 D-97	TSS	8	I	mg/L	P360217	
	SM 4500 F-C-97	Fluoride	0.90		mg F/L	P360336	
2067994	EPA 350.1 Rev. 2.0	Ammonia-N	0.023	Y	mg N/L	P360273	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	IY	mg N/L	P360294	
	EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	0.056		mg N/L	P360321	
	EPA 365.1 Rev. 2.0	Total-P	0.049	Y	mg P/L	P360440	
	SM 5310 B-00	Organic Carbon	5.2	Y	mg C/L	P360636	
2067997	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P360093	
2068076	EPA 200.7 Rev. 4.4	Iron	350	I	ug/L	P360388	
		Manganese	12	I	ug/L	P360388	
		Zinc	15	U	ug/L	P360388	
	EPA 200.8 Rev. 5.4	Aluminum	447		ug/L	P360388	
		Antimony	0.20	U	ug/L	P360388	
		Arsenic	3.23		ug/L	P360388	
		Cadmium	0.080	U	ug/L	P360388	
		Chromium	1.6	U	ug/L	P360388	
		Copper	1.6	U	ug/L	P360388	
		Lead	0.80	U	ug/L	P360388	
		Nickel	2.0	U	ug/L	P360388	
		Selenium	0.80	U	ug/L	P360388	
		Silver	0.040	U	ug/L	P360388	
		Thallium	0.40	U	ug/L	P360388	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 365.1 Rev. 2.0: Total-P: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 5310 B-00: Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: GREENFIELD END OF BUCANEER DR

Collection Date/Time: 03/06/2019 09:00

Field ID: G2NE1154

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2067984	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P360089	
	EPA 300.0	Bromide	52		mg Br/L	P360483	
	SM 2320 B-97	Total Alkalinity	98		mg CaCO3/L	P360330	
	SM 2540 D-97	TSS	11	A	mg/L	P360217	
	SM 4500 F-C-97	Fluoride	0.87		mg F/L	P360336	
2067986	EPA 350.1 Rev. 2.0	Ammonia-N	0.028	Y	mg N/L	P360273	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34	IY	mg N/L	P360346	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.061		mg N/L	P360321	
	EPA 365.1 Rev. 2.0	Total-P	0.046	Y	mg P/L	P360440	
	SM 5310 B-00	Organic Carbon	5.9	Y	mg C/L	P360636	
2067988	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P360093	
2068071	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P360189	
		2,4-D	0.0038	I	ug/L	P359974	
		AMPA**	0.10	UJ	ug/L	P360189	SUR
		Sucralose**	0.010	UJ	ug/L	P360189	SUR
		Endothall**	0.25	U	ug/L	P360189	
		Acetaminophen**	0.0080	U	ug/L	P359974	
		Glufosinate**	0.10	UJ	ug/L	P360189	SUR
		Bentazon	0.0047		ug/L	P359974	
		Glyphosate**	0.10	UJ	ug/L	P360189	SUR
		Carbamazepine**	8.0E-04	U	ug/L	P359974	
		Diuron	0.0020	U	ug/L	P359974	
		Fenuron	0.016	U	ug/L	P359974	
		Fluridone**	0.0013	I	ug/L	P359974	
		Imazapyr**	0.036		ug/L	P359974	
		Hydrocodone**	0.0020	U	ug/L	P359974	
		Ibuprofen**	0.020	U	ug/L	P359974	
		Imidacloprid	0.013		ug/L	P359974	
		Linuron	0.0040	U	ug/L	P359974	
		MCP	0.0020	U	ug/L	P359974	
		Naproxen**	0.0080	U	ug/L	P359974	RPD
		Primidone**	0.0040	U	ug/L	P359974	
		Pyraclostrobin**	0.0020	U	ug/L	P359974	
		Triclopyr**	0.0040	U	ug/L	P359974	
2068073	EPA 200.7 Rev. 4.4	Iron	290	I	ug/L	P360388	
		Manganese	10	I	ug/L	P360388	
		Zinc	15	U	ug/L	P360388	
	EPA 200.8 Rev. 5.4	Aluminum	339		ug/L	P360388	
		Antimony	0.20	U	ug/L	P360388	
		Arsenic	2.62		ug/L	P360388	
		Cadmium	0.080	U	ug/L	P360388	
		Chromium	1.6	U	ug/L	P360388	
		Copper	1.6	U	ug/L	P360388	

Field ID: G2NE1154

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068073	EPA 200.8 Rev. 5.4	Lead	0.80	U	ug/L	P360388	
		Nickel	2.0	U	ug/L	P360388	
		Selenium	0.80	U	ug/L	P360388	
		Silver	0.040	U	ug/L	P360388	
		Thallium	0.40	U	ug/L	P360388	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 365.1 Rev. 2.0: Total-P: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 5310 B-00: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Glyphosate 13C 15N surrogate spike recovery exceeding the control limits.

Results confirmed in re-extraction. MS accuracy for acesulfame K could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Results confirmed in re-extraction.

Sample Location: ST.JOHNS RIVER AT FT CAROLINE DOCK

Collection Date/Time: 03/06/2019 09:25

Field ID: G2NE1179

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2067992	EPA 180.1 Rev. 2.0	Turbidity	5.4	A	NTU	P360090	
	EPA 300.0	Bromide	61		mg Br/L	P360483	
	SM 2320 B-97	Total Alkalinity	94		mg CaCO3/L	P360330	
	SM 2540 D-97	TSS	8	I	mg/L	P360217	
	SM 4500 F-C-97	Fluoride	1.0		mg F/L	P360336	
2067995	EPA 350.1 Rev. 2.0	Ammonia-N	0.015	Y	mg N/L	P360422	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24	IY	mg N/L	P360294	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P360321	
	EPA 365.1 Rev. 2.0	Total-P	0.035	Y	mg P/L	P360440	
	SM 5310 B-00	Organic Carbon	3.8	Y	mg C/L	P360636	
2067998	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P360093	
2068077	EPA 200.7 Rev. 4.4	Iron	460	I	ug/L	P360388	
		Manganese	12	I	ug/L	P360388	
		Zinc	25	U	ug/L	P360388	
	EPA 200.8 Rev. 5.4	Aluminum	442		ug/L	P360388	
		Antimony	0.20	U	ug/L	P360388	
		Arsenic	2.82		ug/L	P360388	
		Cadmium	0.080	U	ug/L	P360388	
		Chromium	1.6	U	ug/L	P360388	
		Copper	1.6	U	ug/L	P360388	
		Lead	2.0	U	ug/L	P360388	
		Nickel	2.0	U	ug/L	P360388	
		Selenium	0.80	U	ug/L	P360388	
		Silver	0.040	U	ug/L	P360388	
		Thallium	0.40	U	ug/L	P360388	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 365.1 Rev. 2.0: Total-P: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 5310 B-00: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 200.7 Rev. 4.4: The sample required dilution for zinc due to matrix interference.

EPA 200.8 Rev. 5.4: The sample required dilution for lead due to matrix interference.

Sample Location: DEER CR @ TALLEYRAND AVE

Collection Date/Time: 03/06/2019 11:35

Field ID: 20030792

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2067985	EPA 180.1 Rev. 2.0	Turbidity	7.5		NTU	P360089	
	EPA 300.0	Bromide	0.53		mg Br/L	P360571	
	SM 2320 B-97	Total Alkalinity	162		mg CaCO3/L	P360330	
	SM 2540 D-97	TSS	3	U	mg/L	P360217	
	SM 4500 F-C-97	Fluoride	0.52		mg F/L	P360803	
2067987	EPA 350.1 Rev. 2.0	Ammonia-N	0.31	Y	mg N/L	P360273	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50	Y	mg N/L	P360294	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P360321	
	EPA 365.1 Rev. 2.0	Total-P	0.075	Y	mg P/L	P360440	
	SM 5310 B-00	Organic Carbon	4.8	Y	mg C/L	P360569	
2067989	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.013		mg P/L	P360128	
2068072	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P360189	
		2,4-D	0.0052	I	ug/L	P359974	
		AMPA**	0.11	I	ug/L	P360189	
		Sucralose**	0.010	U	ug/L	P360189	
		Endothall**	0.25	U	ug/L	P360189	
		Acetaminophen**	0.0086	I	ug/L	P359974	
		Glufosinate**	0.10	U	ug/L	P360189	
		Glyphosate**	0.10	U	ug/L	P360189	
		Bentazon	0.0023	I	ug/L	P359974	
		Carbamazepine**	8.0E-04	U	ug/L	P359974	
		Diuron	0.0058	I	ug/L	P359974	
		Fenuron	0.016	U	ug/L	P359974	
		Fluridone**	8.0E-04	U	ug/L	P359974	
		Imazapyr**	0.13		ug/L	P359974	
		Hydrocodone**	0.0020	U	ug/L	P359974	
		Ibuprofen**	0.020	U	ug/L	P359974	
		Imidacloprid	0.0040	I	ug/L	P359974	
		Linuron	0.0040	U	ug/L	P359974	
		MCP	0.0020	U	ug/L	P359974	
		Naproxen**	0.0080	U	ug/L	P359974	RPD
		Primidone**	0.0040	U	ug/L	P359974	
		Pyraclostrobin**	0.0020	U	ug/L	P359974	
		Triclopyr**	0.0040	U	ug/L	P359974	
		Iron	1.19E+03		ug/L	P360388	
		Manganese	126		ug/L	P360388	
2068074	EPA 200.7 Rev. 4.4	Zinc	15	U	ug/L	P360388	
		Aluminum	91		ug/L	P360388	
		Antimony	0.20	U	ug/L	P360388	
	EPA 200.8 Rev. 5.4	Arsenic	3.56		ug/L	P360388	
		Cadmium	0.080	U	ug/L	P360388	
		Chromium	1.6	U	ug/L	P360388	
		Copper	1.6	U	ug/L	P360388	

Field ID: 20030792

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068074	EPA 200.8 Rev. 5.4	Lead	0.80	U	ug/L	P360388	
		Nickel	2.0	U	ug/L	P360388	
		Selenium	0.80	U	ug/L	P360388	
		Silver	0.040	U	ug/L	P360388	
		Thallium	0.40	U	ug/L	P360388	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 365.1 Rev. 2.0: Total-P: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 5310 B-00: Sample was left out at room temperature overnight, should be stored below 6 degC.

EPA 8321B: MS accuracy for acesulfame K could not be assessed due to high concentration of parameter in the spiked sample.

Non-Conformance Report

NCR ID: 7537

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
NE-DIST-2019-03-07-01	TLH-2019-03-07-26	2067986	
NE-DIST-2019-03-07-01	TLH-2019-03-07-26	2067987	
NE-DIST-2019-03-07-01	TLH-2019-03-07-26	2067993	
NE-DIST-2019-03-07-01	TLH-2019-03-07-26	2067994	
NE-DIST-2019-03-07-01	TLH-2019-03-07-26	2067995	

NCR Type: CUSTODY

NCR Category: General

Observation: Sample not stored in the refrigerator the night of 03/11/2019.

Resolution: Sample returned to refrigerator the morning of 03/12/2019. All analyses requiring refrigeration that were prepared or, if preparation is not required, analyzed on or after 03/12/2019 are Y qualified for incorrect preservation.

Authorized by/Date: Peter D. Kaus 3/21/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360089

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360090

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0
Batch ID: P360483

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0
Batch ID: P360571

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360273

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360294

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360321

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360440

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360093

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360128

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P359974

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P359974

Component	Result	Code	Units
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P360189

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-97
Batch ID: P360330

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 D-97
Batch ID: P360217

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360336

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P360803

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360569

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P360636

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	109		P	85 - 115
Manganese	101		P	85 - 115
Zinc	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.4		P	85 - 115
Antimony	95.6		P	85 - 115
Arsenic	100		P	85 - 115
Cadmium	98.7		P	85 - 115
Chromium	97.8		P	85 - 115
Copper	97.2		P	85 - 115
Lead	97.6		P	85 - 115
Nickel	97.5		P	85 - 115
Selenium	96.5		P	85 - 115
Silver	96.2		P	85 - 115
Thallium	96.4		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P360483

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	104		P	90 - 110

Reference Method: EPA 300.0
Batch ID: P360571

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360273

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P360346

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P360321

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P360440

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360093

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360128

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.9		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P359974

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	96.4		P	40 - 150
Acetaminophen	91.2		P	30 - 150
Bentazon	102		P	30 - 150
Carbamazepine	89.4		P	40 - 150
Diuron	83.3		P	40 - 150
Fenuron	109		P	40 - 150
Fluridone	103		P	40 - 150
Hydrocodone	105		P	40 - 150
Ibuprofen	99.3		P	40 - 150
Imazapyr	106		P	40 - 150
Imidacloprid	99.3		P	40 - 150
Linuron	75.2		P	40 - 150
MCPP	106		P	40 - 150
Naproxen	61.5		P	40 - 150
Primidone	89.8		P	40 - 150
Pyraclostrobin	60.9		P	40 - 150
Triclopyr	70.0		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P360189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P360189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	103		P	40 - 150
Endothall	96.7		P	40 - 150
Glufosinate	141		P	40 - 150
Glyphosate	108		P	40 - 140
Sucralose	97.0		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P360330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360336

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.6		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P360803

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.0		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360569

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P360636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068917	Iron	107	105	P/P	80 - 120
2068917	Manganese	95.1	97.0	P/P	80 - 120
2068917	Zinc	98.4	98.8	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068917	Aluminum	96.9	95.6	P/P	70 - 130
2068917	Antimony	101	99.8	P/P	70 - 130
2068917	Arsenic	110	109	P/P	70 - 130
2068917	Cadmium	98.7	98.5	P/P	70 - 130
2068917	Chromium	88.1	92.5	P/P	70 - 130
2068917	Copper	93.1	92.9	P/P	70 - 130
2068917	Lead	101	101	P/P	70 - 130
2068917	Nickel	94.0	93.2	P/P	70 - 130
2068917	Selenium	82.8	79.7	P/P	70 - 130
2068917	Silver	91.6	90.9	P/P	70 - 130
2068917	Thallium	95.1	94.1	P/P	70 - 130

Reference Method: EPA 300.0
Batch ID: P360483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068367	Bromide	98.1	98.0	P/P	90 - 110
2068489	Bromide	101		P	90 - 110

Reference Method: EPA 300.0
Batch ID: P360571

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068488	Bromide	98.9	95.8	P/P	90 - 110
2068891	Bromide	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067761	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068369	Ammonia-N	93.9	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068043	Kjeldahl Nitrogen	93.9	94.9	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068370	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067879	NO2NO3-N	99.6	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360440

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067987	Total-P	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068036	O-Phosphate-P	96.2	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067989	O-Phosphate-P	91.6	91.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P359974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068137	2,4-D	104	102	P/P	40 - 150
2068137	Acetaminophen	94.9	104	P/P	30 - 150
2068137	Bentazon	64.1	73.6	P/P	30 - 150
2068137	Carbamazepine	64.3	67.3	P/P	40 - 150
2068137	Diuron	50.5	61.2	P/P	40 - 150
2068137	Fenuron	76.4	78.9	P/P	40 - 150
2068137	Fluridone	96.4	103	P/P	40 - 150
2068137	Hydrocodone	96.5	101	P/P	40 - 150
2068137	Ibuprofen	117	117	P/P	40 - 150
2068137	Imazapyr	93.2	101	P/P	40 - 150
2068137	Imidacloprid	131	141	P/P	40 - 150
2068137	Linuron	65.2	68.3	P/P	40 - 150
2068137	MCPP	141	145	P/P	40 - 150
2068137	Naproxen	50.6	74.0	P/P	40 - 150
2068137	Primidone	81.8	87.8	P/P	40 - 150
2068137	Pyraclostrobin	69.1	71.3	P/P	40 - 150
2068137	Triclopyr	98.0	83.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P360189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068137	AMPA	93.1	97.8	P/P	40 - 150
2068137	Endothall	95.6	97.3	P/P	40 - 150
2068137	Glufosinate	109	109	P/P	40 - 150
2068137	Glyphosate	115	109	P/P	40 - 140
2068137	Sucralose	104	101	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P360336

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068489	Fluoride	92.4	93.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P360803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068696	Fluoride	96.1	96.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360569

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067960	Organic Carbon	96.8	96.4	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P360636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067994	Organic Carbon	97.3	96.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067910	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067992	Turbidity	2.39	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068917	Iron	1.82	Spike	P	0 - 20
2068917	Manganese	1.97	Spike	P	0 - 20
2068917	Zinc	0.428	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068917	Aluminum	1.36	Spike	P	0 - 20
2068917	Antimony	0.991	Spike	P	0 - 20
2068917	Arsenic	0.317	Spike	P	0 - 20
2068917	Cadmium	0.146	Spike	P	0 - 20
2068917	Chromium	4.86	Spike	P	0 - 20
2068917	Copper	0.227	Spike	P	0 - 20
2068917	Lead	0.122	Spike	P	0 - 20
2068917	Nickel	0.835	Spike	P	0 - 20
2068917	Selenium	3.80	Spike	P	0 - 20
2068917	Silver	0.770	Spike	P	0 - 20
2068917	Thallium	1.00	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P360483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068367	Bromide	0.0893	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P360571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068488	Bromide	2.25	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067761	Ammonia-N	0.926	Spike	P	0 - 15

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068369	Ammonia-N	2.00	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068043	Kjeldahl Nitrogen	0.833	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068370	Kjeldahl Nitrogen	2.22	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067879	NO2NO3-N	0.458	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067987	Total-P	0.796	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068036	O-Phosphate-P	0.681	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067989	O-Phosphate-P	0.286	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P359974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068137	2,4-D	1.83	Spike	P	0 - 30
2068137	Acetaminophen	8.68	Spike	P	0 - 30
2068137	Bentazon	10.9	Spike	P	0 - 30
2068137	Carbamazepine	4.52	Spike	P	0 - 30
2068137	Diuron	19.3	Spike	P	0 - 30
2068137	Fenuron	3.23	Spike	P	0 - 30
2068137	Fluridone	5.87	Spike	P	0 - 30
2068137	Hydrocodone	4.60	Spike	P	0 - 30
2068137	Ibuprofen	0.237	Spike	P	0 - 30
2068137	Imazapyr	6.39	Spike	P	0 - 30
2068137	Imidacloprid	4.35	Spike	P	0 - 30
2068137	Linuron	4.65	Spike	P	0 - 30
2068137	MCPP	2.52	Spike	P	0 - 30
2068137	Naproxen	37.6	Spike	F	0 - 30
2068137	Primidone	7.01	Spike	P	0 - 30
2068137	Pyraclostrobin	3.07	Spike	P	0 - 30
2068137	Triclopyr	16.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068137	Acesulfame K	12.7	Spike	P	0 - 30
2068137	AMPA	4.15	Spike	P	0 - 30
2068137	Endothall	1.78	Spike	P	0 - 30
2068137	Glufosinate	0.448	Spike	P	0 - 30
2068137	Glyphosate	4.97	Spike	P	0 - 30
2068137	Sucralose	2.67	Spike	P	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P360330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068489	Total Alkalinity	0.0764	Sample	P	0 - 1.6

Reference Method: SM 2540 D-97
Batch ID: P360217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067984	TSS	7.14	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P360336

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068489	Fluoride	0.473	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P360803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068696	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360569

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067960	Organic Carbon	0.392	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P360636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067994	Organic Carbon	0.682	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2068071
Field Sample ID: G2NE1154

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	94.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.1	P	30 - 160
EPA 8321B	Diuron-d6	72.5	P	30 - 160
EPA 8321B	Endothall-d6	104	P	30 - 160
EPA 8321B	Endothall-d6	104	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	0.0	F	30 - 160
EPA 8321B	Ibuprofen-d3	68.3	P	30 - 160
EPA 8321B	Primidone-d5	101	P	30 - 160
EPA 8321B	Sucralose-d6	9.60	F	30 - 160
EPA 8321B	Sucralose-d6	9.60	F	30 - 160

Lab Sample ID: 2068072
Field Sample ID: 20030792

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	77.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	76.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.0	P	30 - 160
EPA 8321B	Diuron-d6	57.8	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	66.9	P	30 - 160
EPA 8321B	Primidone-d5	83.8	P	30 - 160
EPA 8321B	Sucralose-d6	33.5	P	30 - 160
EPA 8321B	Sucralose-d6	33.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89875

Included Lab Sample IDs: 2067984, 2067985, 2067990, 2067991, 2067992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	98.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89876

Included Lab Sample IDs: 2067988, 2067996, 2067997, 2067998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.7	P/P	90 - 110
O-Phosphate-P	99.7	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89896

Included Lab Sample IDs: 2067989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89922

Included Lab Sample IDs: 2068071, 2068072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	70.7	108	P/P	50 - 150
Acetaminophen	123	118	P/P	60 - 160
Bentazon	123	132	P/P	50 - 160
Carbamazepine	106	109	P/P	60 - 150
Diuron	116	90.2	P/P	60 - 150
Fenuron	110	104	P/P	60 - 150
Fluridone	119	122	P/P	60 - 160
Hydrocodone	118	112	P/P	60 - 150
Ibuprofen	109	134	P/P	50 - 160
Imazapyr	101	98.5	P/P	50 - 150
Imidacloprid	95.7	98.6	P/P	60 - 150
Linuron	116	116	P/P	60 - 150
MCP	117	121	P/P	50 - 150
Naproxen	112	125	P/P	50 - 160
Primidone	104	102	P/P	60 - 150
Pyraclostrobin	94.9	101	P/P	60 - 150
Triclopyr	115	106	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89944

Included Lab Sample IDs: 2067986, 2067987, 2067993, 2067994, 2067995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89954

Included Lab Sample IDs: 2067986, 2067987, 2067993, 2067994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	102	P/P	90 - 110
Ammonia-N	102	102	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89980

Included Lab Sample IDs: 2067984, 2067985, 2067990, 2067991, 2067992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.6	P/P	90 - 110
Total Alkalinity	99.6	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89980

Included Lab Sample IDs: 2067984, 2067990, 2067991, 2067992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	99.1	P/P	90 - 110
Fluoride	98.6	97.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89982

Included Lab Sample IDs: 2068071, 2068072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	106	91.3	P/P	60 - 160
Endothall	91.0	89.9	P/P	60 - 160
Sucralose	98.4	89.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89984

Included Lab Sample IDs: 2068071, 2068072

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	101	107	P/P	60 - 160
Glufosinate	113	129	P/P	60 - 160
Glyphosate	102	116	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89991

Included Lab Sample IDs: 2067987, 2067993, 2067994, 2067995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.9	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90009

Included Lab Sample IDs: 2067986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90011

Included Lab Sample IDs: 2067995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.4	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A90025

Included Lab Sample IDs: 2067984, 2067985, 2067990, 2067991, 2067992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	102	103	P/P	90 - 110
Bromide	103	101	P/P	90 - 110
Bromide	94.4	96.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90026

Included Lab Sample IDs: 2068073, 2068074, 2068075, 2068076, 2068077

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.7	97.6	P/P	90 - 110
Antimony	93.8	94.3	P/P	90 - 110
Arsenic	98.2	98.0	P/P	90 - 110
Cadmium	94.7	95.1	P/P	90 - 110
Copper	99.0	97.5	P/P	90 - 110
Lead	98.0	97.8	P/P	90 - 110
Lead	100	98.7	P/P	90 - 110
Nickel	97.6	96.1	P/P	90 - 110
Selenium	95.4	95.7	P/P	90 - 110
Silver	92.9	93.0	P/P	90 - 110
Thallium	91.1	90.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90027

Included Lab Sample IDs: 2068073, 2068074, 2068075, 2068076, 2068077

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	102	101	P/P	95 - 105
Manganese	104	102	P/P	95 - 105
Zinc	101	99.6	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90046

Included Lab Sample IDs: 2067986, 2067987, 2067993, 2067994, 2067995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	103	P/P	90 - 110
Total-P	103	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90052

Included Lab Sample IDs: 2068073, 2068074, 2068075, 2068076, 2068077

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	90.9	96.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A90053
Included Lab Sample IDs: 2067987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	95.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90064
Included Lab Sample IDs: 2068077

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	102	102	P/P	90 - 110
Zinc	100	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A90082
Included Lab Sample IDs: 2067986, 2067993, 2067994, 2067995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	96.0	P/P	90 - 110
Organic Carbon	96.0	95.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A90132
Included Lab Sample IDs: 2067985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	99.5	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.0	
	Turbidity						2.39	
EPA 200.7 Rev. 4.4	Iron	109		107	105			1.82
	Manganese	101		95.1	97.0			1.97
	Zinc	100		98.4	98.8			0.428
EPA 200.8 Rev. 5.4	Aluminum	97.4		96.9	95.6			1.36
	Antimony	95.6		101	99.8			0.991
	Arsenic	100		110	109			0.317
	Cadmium	98.7		98.7	98.5			0.146
	Chromium	97.8		88.1	92.5			4.86
	Copper	97.2		93.1	92.9			0.227
	Lead	97.6		101	101			0.122
	Nickel	97.5		94.0	93.2			0.835
	Selenium	96.5		82.8	79.7			3.80
	Silver	96.2		91.6	90.9			0.770
	Thallium	96.4		95.1	94.1			1.00
EPA 300.0	Bromide	104		98.1	98.0	101		0.0893
	Bromide	97.8		98.9	95.8	98.0		2.25
EPA 350.1 Rev. 2.0	Ammonia-N	102		101	102			0.926
	Ammonia-N	98.6		93.9	96.4			2.00
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8		93.9	94.9			0.833
	Kjeldahl Nitrogen	95.1		107	104			2.22
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0		99.6	99.0			0.458
EPA 365.1 Rev. 2.0	Total-P	103		102	101			0.796
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5		96.2	97.0			0.681
	O-Phosphate-P	96.9		91.6	91.9			0.286
EPA 8321B	2,4-D	96.4		104	102			1.83
	Acesulfame K	101						12.7
	Acetaminophen	91.2		94.9	104			8.68
	AMPA	103		93.1	97.8			4.15
	Bentazon	102		64.1	73.6			10.9
	Carbamazepine	89.4		64.3	67.3			4.52
	Diuron	83.3		50.5	61.2			19.3
	Endothall	96.7		95.6	97.3			1.78
	Fenuron	109		76.4	78.9			3.23
	Fluridone	103		96.4	103			5.87
	Glufosinate	141		109	109			0.448
	Glyphosate	108		115	109			4.97
	Hydrocodone	105		96.5	101			4.60
	Ibuprofen	99.3		117	117			0.237
	Imazapyr	106		93.2	101			6.39
	Imidacloprid	99.3		131	141			4.35
	Linuron	75.2		65.2	68.3			4.65
	MCPP	106		141	145			2.52
	Naproxen	61.5		50.6	74.0			37.6
	Primidone	89.8		81.8	87.8			7.01
	Pyraclostrobin	60.9		69.1	71.3			3.07
	Sucralose	97.0		104	101			2.67
	Triclopyr	70.0		98.0	83.3			16.3
SM 2320 B-97	Total Alkalinity	103					0.0764	
SM 2540 D-97	TSS						7.14	
SM 4500 F-C-97	Fluoride	94.6		92.4	93.2			0.473
	Fluoride	96.0		96.1	96.1			0.0
SM 5310 B-00	Organic Carbon	97.2		96.8	96.4			0.392

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 5310 B-00	Organic Carbon	97.7	97.3 96.6			0.682

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2067984, 2067985, 2067990, 2067991, 2067992
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2068073, 2068074, 2068075, 2068076, 2068077
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2068073, 2068074, 2068075, 2068076, 2068077
EPA 300.0 / E31780	Bromide in aqueous matrices	2067984, 2067985, 2067990, 2067991, 2067992
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2067986, 2067987, 2067993, 2067994, 2067995
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2067986, 2067987, 2067993, 2067994, 2067995
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2067986, 2067987, 2067993, 2067994, 2067995
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2067986, 2067987, 2067993, 2067994, 2067995
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2067988, 2067989, 2067996, 2067997, 2067998
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2068071, 2068072
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2068071, 2068072
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2067984, 2067985, 2067990, 2067991, 2067992
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2067984, 2067985, 2067990, 2067991, 2067992
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2067984, 2067985, 2067990, 2067991, 2067992
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2067986, 2067987, 2067993, 2067994, 2067995

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/07/2019			03/07/2019 17:10	Adrian Shelby	2067984, 2067985, 2067990, 2067991, 2067992
EPA 200.7 Rev. 4.4	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/14/2019 15:50	Vijayalakshmi Reddy	2068073
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/14/2019 15:55	Vijayalakshmi Reddy	2068074
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/14/2019 16:00	Vijayalakshmi Reddy	2068075
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/14/2019 16:06	Vijayalakshmi Reddy	2068076
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/14/2019 16:12	Vijayalakshmi Reddy	2068077
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/18/2019 14:32	Vijayalakshmi Reddy	2068077
EPA 200.8 Rev. 5.4	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/14/2019 20:54	Allison Taylor	2068077
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/15/2019 00:42	Allison Taylor	2068073
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/15/2019 00:52	Allison Taylor	2068074
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/15/2019 01:01	Allison Taylor	2068075
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/15/2019 01:11	Allison Taylor	2068076
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/15/2019 01:20	Allison Taylor	2068077
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/16/2019 00:04	Allison Taylor	2068073
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/16/2019 00:11	Allison Taylor	2068074
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/16/2019 00:17	Allison Taylor	2068075
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/16/2019 00:24	Allison Taylor	2068076
	03/07/2019	03/13/2019 17:30	Elliott D. Healy	03/16/2019 00:30	Allison Taylor	2068077
EPA 300.0	03/07/2019			03/14/2019 20:41	Lipi Saha	2067984
	03/07/2019			03/14/2019 21:50	Lipi Saha	2067990
	03/07/2019			03/14/2019 22:07	Lipi Saha	2067991
	03/07/2019			03/14/2019 22:24	Lipi Saha	2067992
	03/07/2019			03/16/2019 13:51	Lipi Saha	2067985
EPA 350.1 Rev. 2.0	03/07/2019			03/12/2019 12:05	Ping Hua	2067986
	03/07/2019			03/12/2019 12:09	Ping Hua	2067994
	03/07/2019			03/12/2019 12:27	Ping Hua	2067987
	03/07/2019			03/12/2019 12:29	Ping Hua	2067993
	03/07/2019			03/13/2019 11:17	Ping Hua	2067995
EPA 351.2 Rev. 2.0	03/07/2019	03/12/2019 12:50	Adrian Shelby	03/13/2019 14:03	Joseph Suarez	2067987
	03/07/2019	03/12/2019 12:50	Adrian Shelby	03/13/2019 14:04	Joseph Suarez	2067993
	03/07/2019	03/12/2019 12:50	Adrian Shelby	03/13/2019 14:06	Joseph Suarez	2067994
	03/07/2019	03/12/2019 12:50	Adrian Shelby	03/13/2019 14:07	Joseph Suarez	2067995
	03/07/2019	03/13/2019 12:00	Adrian Shelby	03/14/2019 11:08	Joseph Suarez	2067986
EPA 353.2 Rev. 2.0	03/07/2019			03/11/2019 10:24	Beverly Y. Sanders	2067986
	03/07/2019			03/11/2019 10:25	Beverly Y. Sanders	2067987
	03/07/2019			03/11/2019 10:26	Beverly Y. Sanders	2067993
	03/07/2019			03/11/2019 10:27	Beverly Y. Sanders	2067994
	03/07/2019			03/11/2019 10:29	Beverly Y. Sanders	2067995
EPA 365.1 Rev. 2.0	03/07/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 16:50	Rosalyn Ballman	2067986

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 365.1 Rev. 2.0	03/07/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 16:51	Rosalyn Ballman	2067987
	03/07/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 16:52	Rosalyn Ballman	2067993
	03/07/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 16:53	Rosalyn Ballman	2067994
	03/07/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 17:01	Rosalyn Ballman	2067995
EPA 365.1 Rev. 2.0 dissolved	03/07/2019			03/07/2019 17:49	Jhamieka S. Greenwood	2067997
	03/07/2019			03/07/2019 17:54	Jhamieka S. Greenwood	2067988
	03/07/2019			03/07/2019 17:55	Jhamieka S. Greenwood	2067998
	03/07/2019			03/07/2019 17:56	Jhamieka S. Greenwood	2067996
	03/07/2019			03/08/2019 11:22	Jhamieka S. Greenwood	2067989
EPA 8321B	03/07/2019	03/08/2019 14:00	Hoor Shaik	03/09/2019 10:59	Juyoung Kim	2068071
	03/07/2019	03/08/2019 14:00	Hoor Shaik	03/09/2019 11:33	Juyoung Kim	2068072
	03/07/2019	03/12/2019 08:00	Rebecca Ware	03/12/2019 13:42	Juyoung Kim	2068071
	03/07/2019	03/12/2019 08:00	Rebecca Ware	03/12/2019 13:53	Juyoung Kim	2068072
	03/07/2019	03/12/2019 08:00	Rebecca Ware	03/12/2019 20:42	Juyoung Kim	2068071
	03/07/2019	03/12/2019 08:00	Rebecca Ware	03/12/2019 20:56	Juyoung Kim	2068072
SM 2320 B-97	03/07/2019			03/12/2019 05:11	Dale L. Simmons	2067985
	03/07/2019			03/12/2019 05:24	Dale L. Simmons	2067990
	03/07/2019			03/12/2019 08:37	Dale L. Simmons	2067984
	03/07/2019			03/12/2019 08:49	Dale L. Simmons	2067991
	03/07/2019			03/12/2019 09:01	Dale L. Simmons	2067992
SM 2540 D-97	03/07/2019			03/08/2019 17:48	Mariam Hanna	2067984, 2067985, 2067990, 2067991, 2067992
SM 4500 F-C-97	03/07/2019			03/12/2019 02:08	Dale L. Simmons	2067990
	03/07/2019			03/12/2019 03:48	Dale L. Simmons	2067984
	03/07/2019			03/12/2019 03:52	Dale L. Simmons	2067991
	03/07/2019			03/12/2019 03:56	Dale L. Simmons	2067992
	03/07/2019			03/20/2019 00:31	Dale L. Simmons	2067985
SM 5310 B-00	03/07/2019			03/16/2019 03:14	Lauren Lees	2067987
	03/07/2019			03/19/2019 03:58	Julia Storbeck	2067994
	03/07/2019			03/19/2019 06:44	Julia Storbeck	2067986
	03/07/2019			03/19/2019 07:11	Julia Storbeck	2067993
	03/07/2019			03/19/2019 07:24	Julia Storbeck	2067995